

REMARKS

Summary of the Office Action

The drawings are objected to because Fig. 13(a) allegedly fails to show the opening “331.”

Claim 14 is objected to because of alleged informalities.

Claims 12-20 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement.

Claims 12-20 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Claims 6, 8, 9 and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Karnezos et al. (U.S. Patent No. 4,862,490) (hereinafter “Karnezos ‘490”).

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karnezos ‘490 in view of Karnezos et al. (U.S. Patent No. 4,632,871) (hereinafter “Karnezos ‘871”).

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karnezos ‘490 in view of Karnezos ‘871 as applied to claim 1 above, and further in view of Hidekazu (JP 01-276550) (hereinafter “Hidekazu”).

Claims 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karnezos ‘490 as applied to claim 11 above, and further in view of Suzuki et al. (U.S. Patent No. 5,161,179) (hereinafter “Suzuki”).

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karnezos ‘490 as applied to claim 11 above, and further in view of Ukita (U.S. Patent Publication No. 2003/0185344) (hereinafter “Ukita”).

Claims 12 and 17-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kutsuzawa (U.S. Patent No. 6,487,272) (hereinafter “Kutsuzawa”) in view of Karnezos ‘490.

Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kutsuzawa in view of Karnezos ‘490 as applied to claim 12 above, and further in view of Karnezos ‘871.

Claims 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kutsuzawa, Karnezos ‘490, and Karnezos ‘871 as applied to claim 13, above, and further in view of Suzuki.

Summary of the Response to the Office Action

Claims 1, 4, 7-12, 14 and 18 have been amended to differently describe embodiments of the disclosure of the instant application and/to to improve the form of the claims. Claim 5 has been canceled without prejudice or disclaimer. Accordingly, claims 1, 4 and 6-20 are currently pending for consideration. A Submission of Replacement Drawing Sheets is attached including a change to Fig. 13(a).

Objection to the Drawings

The drawings are objected to because Fig. 13(a) allegedly fails to show the opening “331.” In a Submission of Replacement Drawing Sheets attached hereto, Fig. 13(a) has been amended to show the opening indicated by reference numeral “331” in response to the objection to the drawings in the Office Action and consistent with the Examiner’s helpful suggested

revision provided at page 2 of the Office Action. Accordingly, Applicants respectfully request that the objection to the drawings be withdrawn.

Objection to the Claims

Claim 14 stands objected to because of alleged informalities. Applicants have amended claim 14 to improve its form in response to the objection in the Office Action and consistent with the Examiner's helpful suggested revision provided at page 2 of the Office Action. Accordingly, Applicants respectfully request that the objections to the claims be withdrawn.

Rejection under 35 U.S.C. § 112, First and Second Paragraphs

Claims 12-20 stand rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Claims 12-20 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicants have amended the claims in response to the Examiner's comments at pages 3-4 of the Office Action. Applicants respectfully submit that the claims, as amended, fully comply with the requirements of 35 U.S.C. § 112, first and second paragraphs. Accordingly, Applicants respectfully request that the rejections under 35 U.S.C. § 112, first and second paragraphs be withdrawn.

Rejections under 35 U.S.C. §§ 102(b) and 103(a)

Claims 6, 8, 9 and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Karnezos '490. Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karnezos '490 in view of Karnezos '871. Claim 10 stands rejected under 35 U.S.C. § 103(a) as

being unpatentable over Karnezos '490 in view of Karnezos '871 as applied to claim 1 above, and further in view of Hidekazu. Claims 4 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Karnezos '490 as applied to claim 11 above, and further in view of Suzuki. Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Karnezos '490 as applied to claim 11 above, and further in view of Ukita. Claims 12 and 17-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kutsuzawa in view of Karnezos '490. Claims 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kutsuzawa in view of Karnezos '490 as applied to claim 12 above, and further in view of Karnezos '871. Claims 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kutsuzawa, Karnezos '490, and Karnezos '871 as applied to claim 13, above, and further in view of Suzuki.

Claims 1, 4, 7-12, 14 and 18 have been amended to differently describe embodiments of the disclosure of the instant application and/to to improve the form of the claims. Claim 5 has been canceled without prejudice or disclaimer. To the extent that these rejections might be deemed to still apply to remaining claims 1, 4 and 6-20 in their current form, the rejections are respectfully traversed for at least the following reasons.

The X-ray tube as described in newly-amended independent claim 1 includes a newly-added feature with regard to the position where the claimed X-ray target is arranged so that the relationship between the X-ray target and the silicon foil is removed. Before the claim amendments implemented by the instant amendment paper were filed, dependent claim 7 described that the X-ray target is deposited on said inner surface of said silicon foil. The Office Action rejected this combination of claim 7 under 35 U.S.C. § 103(a) as being unpatentable over

Karnezos '490 as applied to claim 11 above, and further in view of Ukita. To the extent that this combination of Karnezos '490 and Ukita might now be applied to newly-amended independent claim 1, such a possible combination would be respectfully traversed for at least the following reasons.

Independent claim 1 has been newly-amended to describe an X-ray tube combination of features newly-describing the position where the claimed X-ray target is arranged. Even further, newly-amended independent claim 1 now defines the configuration of the glass faceplate as including a first major surface, at least of part of which constitutes a part of a vacuum inner space of the closed vessel, a second major surface opposing the first major surface, and a through hole communicating between the first and second major surfaces. Applicants respectfully submit that the claimed X-ray target is arranged in a space defined by an inner wall of the through hole of the glass faceplate. As a result, Applicants respectfully submit that the X-ray target is positioned within the glass faceplate (a space between the first and second major surfaces of the glass faceplate).

In contrast, Applicants respectfully submit that the vacuum window 10 shown in Karnezos '490 is an attachment of the evacuated chamber, and an X-ray target is not even shown in the figure. Applicants respectfully submit that the X-ray target of Karnezos '490 does not exist within the support substrate 12 that is identified as the claimed faceplate in the Office Action's rejection, as can be seen from the figure.

On the other hand, Applicants respectfully submit that Ukita shows the X-ray target 5 which is directly disposed on the faceplate as a transmission window 16. However, it is clear that the X-ray target 5 of Ukita is positioned out of the transmission window 16 (faceplate). In

other words, Applicants respectfully submit that even assuming, strictly arguendo, that Ukita might be combined with Karnezos '490, it is clear that the X-ray tube, as claimed in newly-amended independent claim 1 of the instant application, still could not be achieved because both of these references teach that the X-ray target exists outside of the faceplate (which Applicants respectfully submit might be understood as corresponding to the support substrate 12 of Karnezos '490 and the transmission window 16 of Ukita). The applied secondary reference to Karnezos '871 does not cure the deficiencies discussed above with regard to Karnezos '490 and Ukita. Accordingly, Applicants respectfully submit that newly-amended independent claim 1 is patentable over the applied references of record.

Turning now to independent claim 11, this claim has been newly-amended to describe a combination of features including details of a closed vessel shape and an arrangement position of a protection electrode. More particularly, Applicants respectfully submit that the closed vessel, as described in newly-amended independent claim 11, is defined as a single glass body. Accordingly, Applicants respectfully submit that previous dependent claim 5 has now been canceled. Applicants respectfully submit that with regard to newly-amended independent claim 11, including a description of a closed vessel that is constituted by a single glass body and a specific arrangement position of a protection electrode, the cited references do not teach, or even suggest, a vessel structure as described in the newly-amended claim. Even further, the Office Action indicates "aluminum" as a part corresponding to the claimed protection electrode. However, Applicants respectfully traverse this assertion as being technically inaccurate because the "aluminum" material disclosed in Karnezos '490 is an adhesive for mounting the vacuum window 10 itself in a suitable holder (possibly constituting a part of the evacuated chamber).

Therefore, the “aluminum” material is provided on the back membrane 16. In other words, Applicants respectfully submit that Karnezos ‘490 does not teach, or even suggest, an electrode that corresponds to the claimed protection electrode. Accordingly, Applicants respectfully submit that newly-amended independent claim 11 is patentable over the applied references of record.

Turning now to independent claim 12, this claim has been newly-amended to describe a combination of features including details of an arrangement position of a protection electrode by utilizing the positional relationship between the metal flange and the glass faceplate. In other words, claim 12 has been amended to define a structural relationship between the protection electrode and the metal flange. More particularly, the protection electrode is described in the combination of features of newly-amended independent claim 12 as being arranged at an exposed region of the inner surface of the glass faceplate through the opening of the metal flange. Applicants respectfully submit that the cited references do not teach or even suggest such a structural feature. Accordingly, Applicants respectfully submit that newly-amended independent claim 12 is patentable over the applied references of record.

Accordingly, Applicants respectfully assert that the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be withdrawn because the applied art of record, whether taken singly or combined, teach or suggest each feature of newly-amended independent claims 1, 11 and 12 of the instant application. As pointed out in MPEP § 2131, “[t]o anticipate a claim, the reference must teach every element of the claim.” Thus, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. v. Union Oil Co. Of California, 2 USPQ 2d 1051, 1053

(Fed. Cir. 1987)." Similarly, MPEP § 2143.03 instructs that "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art.' In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)."

Furthermore, Applicants respectfully assert that the dependent claims are allowable at least because of their dependence from claims 1, 11 or 12, and the reasons set forth above.

Finally, Applicants respectfully submit that the additionally-applied references to Suzuki, Hidekazu and Kutsuzawa do not cure the deficiencies of the applied references as discussed previously.

CONCLUSION

In view of the foregoing, Applicants submit that the pending claims are in condition for allowance, and respectfully request withdrawal of all outstanding objections and rejection, and request the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution. A favorable action is awaited.

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and 1.17 which may be required, including

any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0573.

This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,

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